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Eastern Region

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Caywood Point Hemlock Woolly Adelgid Suppression and Prevention Project

Decision Memo

Finger Lakes National Forest
Hector Ranger District
Town of Lodi
Seneca County, New York

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Caywood Point Hemlock Woolly Adelgid Suppression and Prevention Project Decision Memo

USDA Forest Service, Eastern Region, Finger Lakes National Forest
Hector Ranger District
Town of Lodi, Seneca County, New York

I. SUMMARY

As District Ranger for the Hector Ranger District of the Finger Lakes National Forest (FLNF), I am approving the implementation of the Caywood Point Hemlock Woolly Adelgid (HWA) Suppression and Prevention Project. The project includes authorizing the application of imidicloprid (Coretect ™) tablets and basal bark applications of dinotefuran (Safari ™) treatment of approximately 300 hemlock trees within a 134 acre area of the Caywood Point Recreation and Education Special Area Management Area. The hemlock trees in this area are undergoing stress and mortality due to HWA that is present (and expanding) despite a released biological control in October 2009. Without action, Caywood's ecological and visual characteristic (which hemlock is a part of), is expected to be affected in the near future. The project aims to offer an important regional study location for HWA suppression and prevention and to maintain current hemlock trees that are present there. The project is located on the Hector Ranger District of the Finger Lakes National Forest (FLNF) in the Town of Lodi, Seneca County, New York (see attached maps in Appendix B).

II. DECISION TO BE IMPLEMENTED

A. Project Area and Background

The FLNF encompasses 16,212 acres between Seneca and Cayuga Lakes in the Finger Lakes Region of New York State. An administrative unit of the Green Mountain National Forest (GMNF), the FLNF is the only national forest in New York, and the only public land that has had an explicit philosophy of multiple-use management. The FLNF has a history of demonstration and education projects. Forest leadership is committed to promoting natural resource management and conservation (USDA Forest Service 2006). The Caywood Point property was acquired in 1997. The 214-acre tract lies between Highway 414 and Seneca Lake in southern Seneca County (see attached maps) and is designated as the Caywood Point Recreation and Education Special Area Management Area (MA) in the 2006 FLNF Land and Resource Management Plan (Forest Plan, pp. 57-59). It is the only National Forest land on the shoreline of Seneca Lake, and one of only six public access points on the lake's 75 miles of shoreline. Caywood Point is managed for recreation and education and is often utilized by the public for hiking, camping, fishing, and hunting. Among the recreational and educational values for which it was established are ecological values associated with the natural communities and rare plants at this site (see Ecology and Botany Specialist Reports). Hemlock is the dominant tree in the stands closer to the lake (C77 stand 1; C88 stands 1, 2, 3, and 6; C89 stands 1 and 2), occurring with pignut hickory, black cherry, and red maple.

A very light HWA infestation was detected in 2008 on overstory and understory hemlocks at the northern drainage of Caywood Point during a survey conducted by officials from Cornell University, FLNF, and volunteer partners. Subsequent hemlock surveys the following spring conducted by Cornell and the Forest Health Protection (FHP) staff confirmed that the HWA infestation was limited to just a few trees at Caywood Point (Souto 2009).

The hemlock woolly adelgid (HWA), Adelges tsugae Annand, an invasive insect native to Asia, was first detected in eastern North America in Richmond, Virginia in the 1950s (McClure, 1996) and has since spread to over half of the natural range of eastern hemlock (USDA Pest Alert, 2010). HWA weaken hemlock trees by feeding on the nutrient and water solution in the xylem ray parenchyma (Young et al., 1995); weakened trees begin to lose needles within months followed by fine twig and limb dieback after several years of infestation (McClure, 1996). The HWA infestation has resulted in widespread hemlock mortality in the Appalachian range in mid-Atlantic and southern states. Until recently, HWA-caused mortality has been limited in northern New York and New England due to frigid late-winter temperatures which substantially reduce overwintering adelgid populations (Skinner et al. 2003, and references within). However spread of HWA has steadily continued northward in New York and New England, primarily by wind, birds, deer, and other mammals (USDA Pest Alert, 2010).

Management and suppression of HWA has focused on chemical treatment and establishing various forms of biological control. Chemicals have been very effective at controlling HWA in small high value hemlock stands. Systemic treatment with the neonicotinoid insecticide imidicloprid has been shown to provide multiple years of protection (Cowles and Lagalante 2009). Despite their effectiveness in high value stands, chemicals cannot be implemented as a long term solution to maintain healthy hemlock on a landscape level.

The US Forest Service has been investing in biological control of HWA since 1992 with the goal of establishing a number of predators and pathogens to lower HWA populations and limit damage to hemlocks. Through partnerships with states and universities, three different species of predatory beetles have been released for the biological control of HWA throughout the range of the infestation in the East (Fig. 1). Most recently, a strain of Laricobius nigrinus from Idaho has been released and has begun to establish on HWA populations in New York and New England (Mausel et al. 2010). There have been several attempts at controlling HWA with entomopathogens, however, further research is needed before any wide scale management with fungal pathogens can occur. Successful classical biological control of HWA will require the establishment of a complex of natural enemies and pathogens. Other potential predator beetles and pathogens are constantly being evaluated for release in the United States. Building a suite of natural predators and pathogens is a lengthy undertaking and it is still uncertain whether biological control will be effective at reducing the impact of HWA and preserve hemlock health and vigor.

In the spring of 2009, natural resource specialists and scientists from the FLNF, the GMNF, University of Massachusetts, Cornell University, FHP, and New York Department of Environmental Conservation met to discuss HWA management options. Four options were discussed:

1. No management
2. Biological control with predatory beetles
3. Chemical control
4. Tree removal

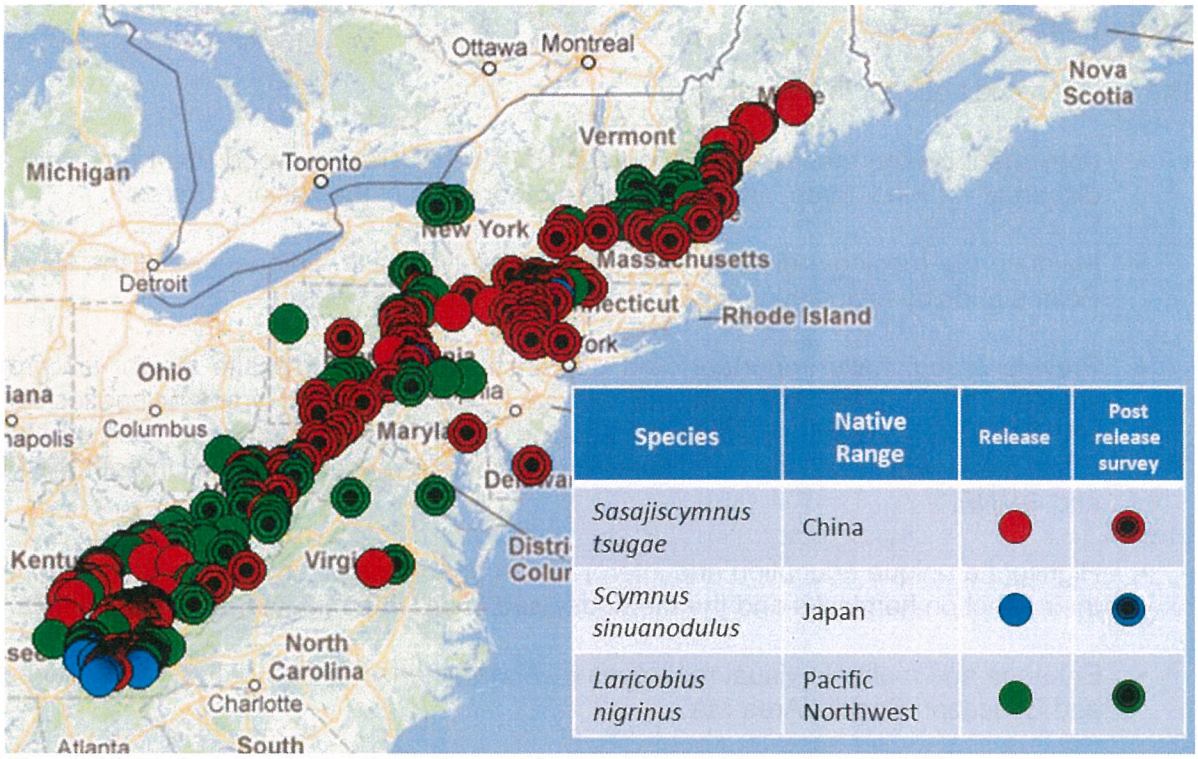


Fig. 1. Map of predator beetles released for the biological control of HWA.

The team determined that the Caywood Point site was a good candidate for biological control as the infestation was small and that the infested trees were healthy and showing lots of new growth. On August 13, 2009 a letter was furnished to the project file by acting District Ranger Chris Zimmer authorizing the control of HWA within the Caywood Point Recreation and Education Special Area MA with the release of predatory beetles. The Idaho strain of Laricobius nigrinus was recommended as the best candidate for release due to its strong potential to survive the Finger Lakes climate. On October 29, 2009, David Mausel from University of Massachusetts released 300 adult L. nigrinus at Caywood Point. A single adult L. nigrinus was recovered during the first post release survey the following fall showing that the predator beetle had become established on the HWA population (Rosenholm 2010). A single beetle was again recovered near the release site during the 2011 fall survey. Finally, two adult L. nigrinus were recovered in the fall of 2012, one near the release site, the other on the opposite side of the northern drainage. The collection of a third generation of L. nigrinus has further confirmed establishment and spread of the predator beetle at Caywood Point.

The HWA population at Caywood Point continued to grow through 2011 however and surveys of the region in the spring of 2012 showed significant population expansion (Whitmore, personal communication). Population expansion and hemlock mortality was confirmed at Caywood Point during surveys in the spring and fall of 2012. It is believed that the mild winter of 2011-2012 failed to reduce overwintering HWA, resulting in a massive and damaging HWA population.

Despite the establishment of L. nigrinus at the site, it was determined that significant hemlock mortality is expected unless further management is conducted.

B. Purpose and Need

The purpose and need for this action is to:

- Implement control measures to suppress HWA within the Caywood Point area and slow dispersal via wind, birds, and mammals to other parts of the National Forest.

- Maintain the (ecology) diversity, structural integrity, health, uniqueness of the Caywood Point stands by maintaining the current eastern hemlock trees.

- Provide a regionally important field demonstration / example site which will provide valuable data on the field application of both insecticides and predator beetles for the control of hemlock woolly adelgid. Resulting region-specific information will greatly aid forest managers in making management decisions to reduce HWA risk in both the FLNF and GMNF.

- Highlight a unique education and interpretation opportunity on non-native invasive pests, their effect on hemlocks and the methods used in order to mitigate the pests' effects.

- Enhance and maintain visual resources that characterize the Caywood Point Recreation and Education Special Area MA.

The Forest Plan provides several key points that are the basis for the purpose and need of this action:

  - "Maintain and restore quality, amount, and distribution of habitats to produce viable and sustainable populations of native and desirable non-native plants and animals" (Forest Plan Goal 2, p. 10).
  - "Minimize adverse effects of non-native invasive species on National Forest resources through containment, abatement, and introduction prevention" (Forest Plan 2.2.2 Objective, p.12).
  - "Demonstrate innovative, ecologically sound management practices that can be applied to other lands" (Goal 9, p. 14).
  - "Maintain or enhance visual resources such as viewsheds, vistas, overlooks and special features" (Goal 16, p. 16).

In regards to Forest Health and Disturbance Processes the Forest Plan gives direction:

  - "Non-native insect and disease pathogens shall be managed using appropriate biological, silvicultural or chemical controls. Chemical controls shall only be used when other methods are ineffective" (Forest Wide Standard S-5 p. 28).
  - When it is safe and effective to do so, the Forest Service should use an integrated pest management approach to manage NNIS (Guideline-3, p. 28).
    - Conduct early treatment of new infestations
    - Protect Special Areas

In regards to the Forest Plan's direction of pests, diseases and non-native invasive species in the Caywood Point Recreation and Education Special Area MA (8.2):

  - Chemical and biological controls may be utilized when determined to be less ecologically disruptive than the target pest (Guideline 1, p.58).

If this action is not taken, despite a small known population of a released bio-control, continual hemlock woolly adelgid populations are likely to increase within the Caywood Point area and cause significant mortality to the hemlock trees that are present thereby contributing as an additional source for HWA spread. Loss of overstory hemlock across this area would affect the long term forest structure and composition of Caywood Point thereby affecting the visual as well as the ecological qualities present (see complete Ecologist Specialist Report in project file). Further non-action would mean a delay in a regionally important HWA information gathering (research) and dissemination location.

C. Description of Decision

My decision is to authorize a forest health study of Hemlock Woolly Adelgid by authorizing a New York State Department of Environmental Conservation certified chemical application of Safari ™ basal bark spray and Coretect™ tablets on ~300 hemlock trees within portions of stands in the Caywood Point Recreation and Education Special Area. Implementation of this project is planned for Spring/Summer 2013 and in accordance to design elements contributed by specialists (see project record). This authorization includes data collection of; tree and stand responses, biological control and HWA responses. The field location and actual application of an integrated pest strategy will provide information to aid managers in decisions surrounding hemlock, HWA and their biological controls.

My decision includes implementation of mitigation measures and monitoring requirements identified in Appendix A and D (respectively) of this Decision Memo. This decision is based upon an environmental analysis conducted by an interdisciplinary team of Forest Service specialists, and responses to public scoping (Appendix C). This information is filed in the project planning record located in the Hector Ranger District office.

D. Alternative Actions Considered but Dismissed

It was discussed to release more of the biological control beetle(s) and explore silvicultural control methods, however these approaches were dismissed after it was determined that these would not address the current and near future hemlock mortality at the site. The current mortality of the hemlock trees caused by the HWA population growth is out pacing the current population growth of the biological control beetle.

III. REASONS FOR CATEGORICALLY EXCLUDING THE DECISION

Decisions may be categorically excluded from documentation in an environmental assessment (EA) or environmental impact statement (EIS) when they are within one of the categories of actions found at 36 CFR 220.6(d) or (e), and there are no extraordinary circumstances related to the decision that may result in a significant individual or cumulative environmental effect.

A. Category of Exclusion

Based on the environmental analysis included in the project planning record and on experience with similar activities on the FLNF and other National Forest lands, I have concluded that this decision can be appropriately categorically excluded from further analysis and documentation in an EA or EIS. I have determined that the selected action is a routine activity within the following categories of exclusion found at:

7 CFR 1b.3(a)(3) "Inventories, research activities, and studies, such as resource inventories and routine data collection when such actions are clearly limited in context and intensity."
and
36 CFR 220.6(d)(5) "Repair and maintenance of recreation sites and facilities. Examples include but are not limited to:

(i) Applying registered herbicides to control poison ivy on infested sites in a campground;
(ii) Applying registered insecticides by compressed air sprayer to control insects at a recreation site complex;
(iii) Repaving a parking lot; and
(iv) Applying registered pesticides for rodent or vegetation control."

B. Relationship to Extraordinary Circumstances

Resource conditions that should be considered in determining whether extraordinary circumstances related to the proposed action warrant further analysis and documentation in an EA or EIS may be found at 36 CFR 220.6(b)(1). The degree of any potential effect from the proposed action associated with these resource conditions determines whether extraordinary conditions exist. The mere presence of one or more of these resource conditions does not preclude use of a categorical exclusion.

I have considered the potential effects from the project associated with the resource conditions listed at 36 CFR 220.6(b)(1), and conclude that there are no extraordinary circumstances related to the decision that may result in a significant individual or cumulative effect on the quality of the human environment. My conclusion is based on information presented in this document and the entirety of the project planning record. A summary of the project's potential effects on each resource condition is as follows:

1. Federally Listed Threatened or Endangered Species or Designated Critical Habitat, Species Proposed for Federal Listing or Proposed Critical Habitat, or Forest Service Sensitive Species

There are no federally listed threatened or endangered plant or animal species or designated critical habitat thereof on the Finger Lakes National Forest. Therefore, this project would have "no adverse effect" on T&E species or critical habitat (Plant and Wildlife Biological Evaluations (BEs), January 18th and 25th, 2013 -respectively).

Forest Service Manual (FSM) 2670 direction requires analysis of potential effects to sensitive species, those species for which the Regional Forester has identified population viability is a concern. These species are listed as Regional Forester's Sensitive Species (RFSS).

RFSS Plants

There are 9 of 20 RFSS plant species known from Caywood Point (see botany BE) most consist of scattered plants or sub-populations. No effects from either insecticide are expected for any of the rare plants that occur at Caywood Point, the only other concern is potential trampling by project implementers. While the known rare plants are not associated with hemlocks, they could be trampled by workers en route to the hemlocks. Although it is unlikely that this would happen, since this is the only known location on the FLNF for most of these species, the requested mitigation is for the field implementers to become familiar with how to identify these plants, carry a map of their known locations, and avoid contact with

them. If this happens, no effects would be expected to any of these RFSS (Plant Biological Evaluation, January 18th, 2013).

RFSS Wildlife and habitat

In addition, there is one RFSS animal know to occur within the project boundary. The West Virginia White (*Pieris virginiensis,* WVW) is a RFSS listed butterfly that in the larval stage feeds on toothwort (only *Cardamine concatenate* has been found at Caywood Point). Toothwort is commonly found north of the trail beyond the lower gate and around the old "administration building site". However there is little evidence that the specific areas proposed for chemical application overlap with large toothwort populations as the treatment locations will be to ~300 trees that are closer to the lake and not in this specific area. No other RFSS species or habitats are known to exist within the project area.

In regards to potential suitable habitat, there is the potential habitat for Little Brown Bat and Northern Myotis. Both of these bats prefer dead trees or trees with exfoliating bark (especially shagbark hickory), however the likelihood of occurrence of these RFSS animals on this parcel of National Forest System lands is low due to variable nature and limited disturbance throughout the project site and no know records of occurrence in the surrounding area.

In regards to fish and their habitat, given the steep topography upstream of Seneca Lake and the associated natural barriers, there is no suitable fish habitat within the streams that intersect the project site.

This project may impact individuals or habitat, but not likely to contribute to a trend towards federal listing or loss of viability for any RFSS animal or their preferred habitat (Wildlife Biological Evaluation, January 25th, 2013).

2. Floodplains, Wetlands, or Municipal Watersheds

The project is not located near any floodplains, or wetlands however is directly adjacent to Seneca Lake and within the Indian Run-Seneca Lake subwatershed. Seneca Lake is the water source for several municipalities which are not limited to; Watkins Glen, Hector Township, Geneva and more. No effects to these municipal watersheds (Seneca Lake) are expected since the application of stated chemicals will be applied in accordance with New York State Applicators guidelines as well as each products application instructions. Application includes avoiding spraying Safari ™ on the ground; during raining conditions or when it is expected within 24 hours and avoiding applying Coretect ™ tablets in areas where surface water is present or below high water mark (see NY State product registration for full guidelines). Additionally, being the formulations are of low-dose, on a fine-scale and applied with above stated guidelines, this significantly reduces the potential impacts to aquatic resources (SERA 2005, SERA 2009, Cowles and Lagalante 2009, Cowles 2009). As a result, no effects associated with these resources are expected from this project (Diane Shirley-Ecologist Specialist Report January 15, 2013).

3. Congressionally Designated Areas, such as Wilderness, Wilderness Study Areas, or National Recreation Area

Wilderness:

There is no designated Wilderness on the FLNF.

Wilderness Study Areas:

There are no Congressionally designated Wilderness Study Areas on the FLNF.

National Recreation Areas:

There are no National Recreation Areas on the FLNF.

Wild and Scenic Rivers:
There are no Wild and Scenic Rivers on the FLNF.

4. Inventoried Roadless Areas or Potential Wilderness Areas
There are no inventoried roadless areas on the FLNF.

5. Existing and Candidate Research Natural Areas
There are no existing or candidate Research Natural Areas (Forest Plan, pp. 60 to 62) within or directly adjacent to the project area. However a staff ecologist review of the project indicated that non-action of this project may result in an indirect effect of furthering the potentiality of HWA to spreading to the Saw Mill Creek Candidate Research Natural Area (cRNA) which is 4.3 air miles away from Caywood Point. This project will have a cumulative beneficial effect on the Sawmill Creek cRNA (and other hemlock-dominated ravine areas) by reducing the local population levels of HWA, potentially delaying their future infestation (Diane Burbank- Ecologist specialist report, January 15th, 2013).

6. American Indian and Alaska Native Religious or Cultural Sites

See Item 7 below.

7. Archeological Sites, or Historic Properties or Areas

There are no cultural or historic resources within the influence of the project. As a result, no effects to these resources are expected (email from Forest Archeologist January 15th, 2013).

C. Other Resources

In addition to resource conditions that could lead to extraordinary circumstances, I have also considered the direct, indirect, and cumulative effects to other resources such as soil, water, fisheries, visuals, recreation, and vegetation. The project is not expected to result in any adverse effects associated with these resources, particularly because all applicable Forest Plan standards and guidelines will be implemented (written communication with Forest Service resource specialists: Diane Burbank, MaryBeth Deller, Chris Casey, Nancy Burt, Dave Lacy, Donna Marks, Carol Burd and Paul Widowski). See project record for internal emails with specialist and pertinent specialist reports.

IV. PUBLIC INVOLVEMENT

This project was listed in the quarterly *Finger Lakes National Forest Schedule of Proposed Actions* (SOPA) beginning in January 2013, and will remain in the SOPA until the project is authorized for implementation.

Public involvement included:

- Publishing proposed action and comment period in Ithaca Journal on November 29th,2012 triggering a formal 30-day comment period from November 30 to December 31, 2012.
- Sending the project description (including maps) to entire SOPA mailing list (see project file). This included mass emailing and hard copy mailing to approximately 100

individuals/ groups. Scoping included the Seneca Nation of Indians Tribal Preservation Office.

- Phone call and response email to comment received from Kate Bartholomew (January 17th, 2013)
- Emailings/ phone calls with Mark Whitmore (Cornell Forest Entomology professor) and/or (Mike Bohne FHP State and Private Forestry/NA) with specific questions regarding proposed chemicals.

During the comment period 5 comments (letters or emails) were received with 3 of the comments either benign or supportive in nature. The remaining 2 comments contained issues of concern that were considered and addressed in the analysis process.

Comments received have been tracked in detail in Appendix C of this Decision Memo and are summarized as follows:
Overall, concerns raised were in regards to the effect of proposed chemicals on the environment, but due to the tree specific application, low tendency of environmental drift and effects determination by the staff ecologist, botanist, and wildlife biologist it was determined loss of the hemlock (and the habitat) they provide is more deleterious (both on short- and long-term) then the proposed chemicals as applied (SERA 2005, SERA 2009, Daniel Boone Suppression of Hemlock Woolly Adelgid Infestations EA and Decision Notice 2011).

This project was also internally reviewed by Forest Service staff. In order to identify potential resource concerns a preliminary internal (see project file for complete emails) email was sent to resource specialists on November 27th, 2012. The resultant response emails from this internal scoping indicated no major issues of concern that necessitated the analysis to be documented in an environmental assessment or environmental impact statement. Upon final review, staff specialist reports indicated that with mitigation measures (see Appendix A) during implementation no extraordinary circumstances or violations to pertinent laws/regulations would be encountered.

V. FINDINGS REQUIRED BY OR RELATED TO OTHER LAWS AND REGULATIONS

My decision will comply with all applicable laws and regulations. I have summarized some pertinent laws and regulations in this section.

National Environmental Policy Act
The National Environmental Policy Act (NEPA) requires public involvement and consideration of environmental effects. The entirety of documentation for this decision supports compliance with this Act.

Forest Consistency (National Forest Management Act)
The National Forest Management Act (NFMA) requires development of long-range land and resource management plans, and that all site-specific project activities to be consistent with direction in the plans. The FLNF Land and Resource Management Plan (Forest Plan) was completed and approved in 2006 as required by the NFMA and provides direction for all management activities on the Forest. The Caywood Point Hemlock Woolly Adelgid Suppression and Prevention Project implements the Forest Plan, and its consideration is guided by direction for the Recreation and Education Special Area Management Area (Forest Plan, p.57).

My decision is based on the best available science, including a review of the record that shows a thorough review of relevant scientific information, a consideration of responsible opposing

views, and the acknowledgement of incomplete or unavailable information, scientific uncertainty, and risk (see project file). As required by the NFMA Section 1604(i), I find this project to be consistent with the Forest Plan including goals, objectives, desired future conditions, and Forest-wide and Management Area standards and guidelines.

Endangered Species Act
The Endangered Species Act requires that federal activities do not jeopardize the continued existence of any species federally listed or proposed as threatened or endangered, or result in adverse modification to such species' designated critical habitat. In accordance with Section 7(c) of this Act, a report of the listed and proposed, threatened or endangered species that may be present in the project area was reviewed. See Section III, Item B.1 of this decision document.

Clean Water Act
The intent of the Clean Water Act is to restore and maintain the integrity of waters. The Forest Service complies with this Act through Forest Plan standards and guidelines, specific project design criteria, and mitigation measures to ensure protection of soil and water resources.

Wetlands (Executive Order 11990)
Executive Order 11990 directs the agency to avoid to the extent possible the adverse impacts associated with the destruction or modification of wetlands, and to avoid support of new construction in wetlands wherever there is a practical alternative. See Section III, Item B.2 of this decision document.

Floodplains (Executive Order 11988)
Executive Order 11988 directs the agency to avoid to the extent possible the adverse impacts associated with the occupancy and modification of floodplains, and to avoid support of floodplain development wherever there is a practical alternative. See Section III, Item B.2 of this decision document.

Native American Graves Protection and Repatriation Act
The Native American Graves Protection and Repatriation Act addresses the discovery and protection of Native American human remains and objects that are excavated or discovered on federal lands. The Act encourages avoidance of archaeological sites that contain burials or portions of sites that contain graves through "in situ" preservation, but may encompass other actions to preserve these remains and items. See Section III, Item B.6 of this decision document.

National Historic Preservation Act
Section 106 of the National Historic Preservation Act requires federal agencies to take into account the effect of a project on any district, site, building, structure, or object that is included in, or eligible for inclusion in the National Register. It also requires federal agencies to afford the Advisory Council on Historic Preservation a reasonable opportunity to comment. See Section III, Item B.7 of this decision document.

Archeological Resources Protection Act
The Archeological Resources Protection Act covers the discovery and protection of historic properties (prehistoric and historic) that are excavated or discovered on federal lands. This Act affords lawful protection of archaeological resources and sites that are on public and Indian lands. See Section III, Item B.7 of this decision document.

Federal Noxious Weed Act and Executive Order 11312 (Non-native Invasive Species)
The Federal Noxious Weed Act requires cooperation with State, local, and other federal agencies in the management and control of non-native invasive species (NNIS). Executive Order (EO) 11312 requires all pertinent federal agencies (subject to budgetary appropriations) to prevent the introduction of NNIS. This project's decision meets the intent of this law and EO by incorporating all pertinent Forest Plan standards and guidelines, and mitigation measures to ensure the management and control of NNIS.

Environmental Justice (Executive Order 12898)
Executive Order 12898 requires consideration of whether projects would disproportionately impact minority or low-income populations. This decision complies with this order. Public involvement has occurred (see Section IV), the results of which I have considered in the decision-making process for this project. No adverse impacts to local minority or low-income populations were identified.

VI. ADMINISTRATIVE REVIEW OR APPEAL OPPORTUNITIES

A 2012 court ruling (Sequoia ForestKeeper v. Tidwell, 11-cv-00679-LJO-DLB (E.D. Cal.)) requires that actions that can be categorically excluded from an Environmental Assessment or Environmental Impact Statement using categories found at 36 CFR 220.6(e) or other categories documented in a Decision Memo be subject to public notice, comment, and opportunity for administrative appeal pursuant to 36 CFR Part 215. Only those individuals or organizations who submitted comments during the formal 30-day notice and comment period, as specified by a legal notice in the *Ithaca Journal* newspaper, may appeal this decision.

A written notice of appeal must be submitted within 45 calendar days beginning the day after the legal notice for this decision is published in the *Ithaca Journal*, our newspaper of record. However, when the 45-day filing period would end on a Saturday, Sunday, or Federal holiday, then filing time is extended to the end of the next Federal working day. The date of the publication of the legal notice is the only means for calculating the date by which appeals must be submitted; do not rely upon any other source for this information.

The Notice of Appeal must be sent to:

Colleen Pelles Madrid, Appeal Deciding Officer
Attn: Appeals & Litigation
USDA-Forest Service, Eastern Region
626 E. Wisconsin Ave.
Milwaukee, WI 53202

Appeal notices may also be emailed to: appeals-eastern-regional-office@fs.fed.us with a Subject Header of: [Caywood Point Hemlock Woolly Adelgid Suppression and Prevention Project]. Electronic appeals should be in TXT, RTF, DOC, DOCX, PDF or other Microsoft Office-compatible formats. In cases where no identifiable name is attached to an electronic message, a verification of identity will be required. A scanned signature is one way to provide verification. Appeal notices may also be faxed to: (414) 944-3963, ATTN: Appeal Deciding Officer, USDA Forest Service, Eastern Region. Hand-delivered appeals must be delivered during normal business hours of 7:30 am to 4:00 pm (Central Time). Monday to Friday, excluding Federal holidays. Appeals must meet the content requirements of 36 CFR 215.14.

VII. IMPLEMENTATION DATE

If no appeal is received, implementation of this decision may occur on, but not before, five (5) business days from the close of the appeal filing period. If an appeal is received, implementation may not occur for fifteen (15) days following the date of appeal disposition.

VIII. CONTACT PERSON

Further information about this decision can be obtained from Jodie L. Vanselow during normal office hours (weekdays, 8:00 am to 4:30 pm) at the Hector Ranger District office located at: 5218 State Route 414, Hector, NY 14841; phone: 607-564-4470; fax: 607-546-4474; or email: jvanselow@fs.fed.us.

IX. SIGNATURE AND DATE

Jodie L Vanslow 1/30/2013

_/s/ Jodie L. Vanselow___ January 30th, 2013_____
Date

Jodie L. Vanselow
District Ranger
Finger Lakes National Forest

Caywood Point Hemlock Woolly Adelgid Suppression and Prevention Project Decision Memo
APPENDIX A – Mitigation Measures

All pertinent Forest-wide, and Recreation and Education Special Area Management Area standards and guidelines will be adhered to during project implementation. The following additional mitigation measures will also be adhered to during project implementation:

Both chemicals used for the suppression and prevention of hemlock woolly adelgid will be applied according to registered label requirements and specifications. In addition, pesticide applicators will be required to have a New York State Pesticide Applicators License (to be verified) prior to application of any chemicals.

In regards to Regional Foresters Sensitive Species (plants):
The requested mitigation is for the field implementers to become familiar with how to identify these plants, carry a map of their known locations, and avoid contact with them.

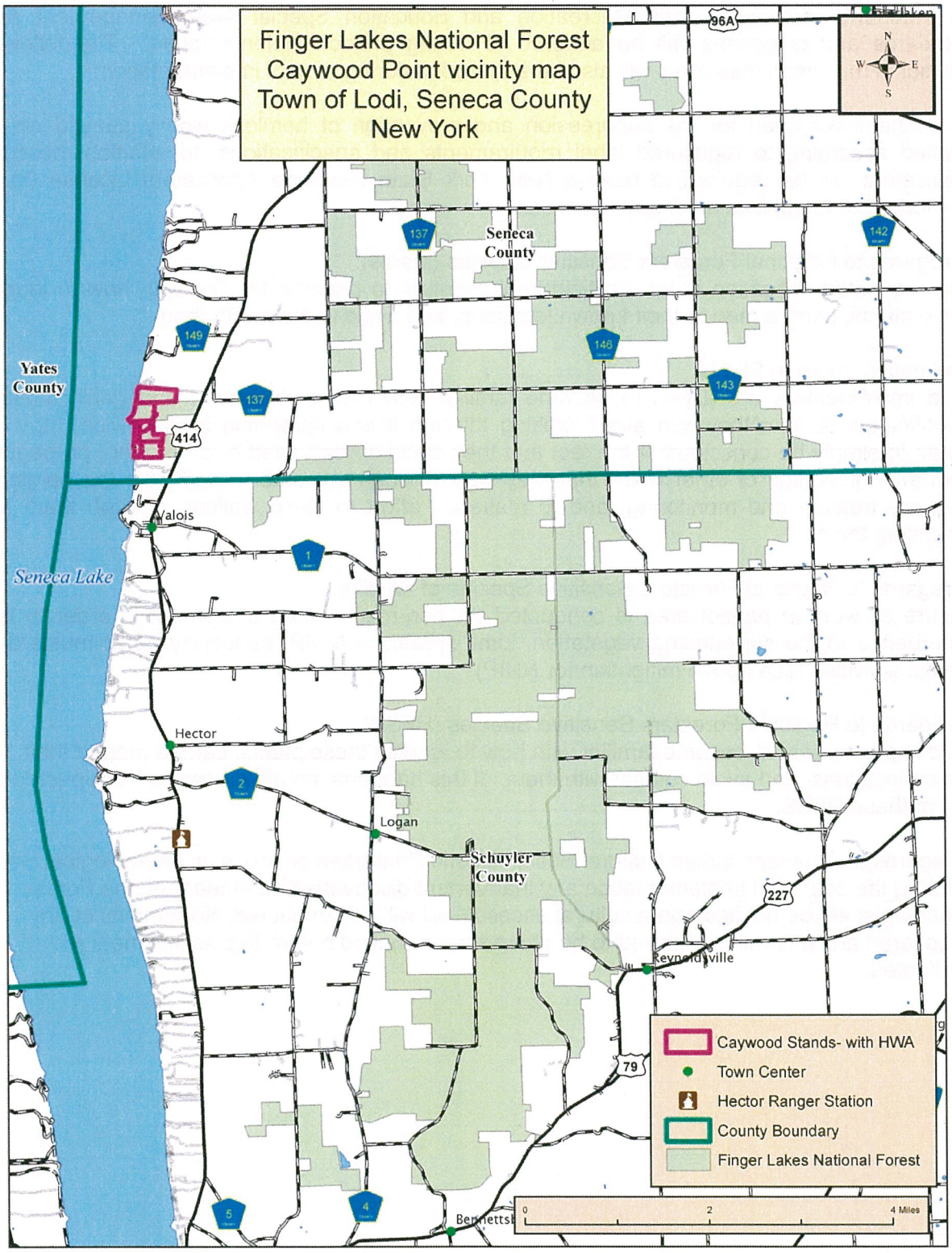
Non-native Invasive Plants:
Field implementers are asked to become familiar with pale swallowwort and garlic mustard identification so that they can avoid walking through it and spreading it. Likewise, they are asked to simply be conscious of the fact that they could spread seed or other plant propagules from any infestation of other NNIP that they walk through en route to and from the hemlocks they are treating and monitoring, and to make an effort to avoid walking through them and spreading them.

In regards to Regional Foresters Sensitive Species of Wildlife:
Ensure all work in project area is conducted via non-mechanized equipment in order to limit disturbance to the surrounding vegetation. Limit spread of NNIP, especially garlic mustard by project activities (see above mitigation for NNIP).

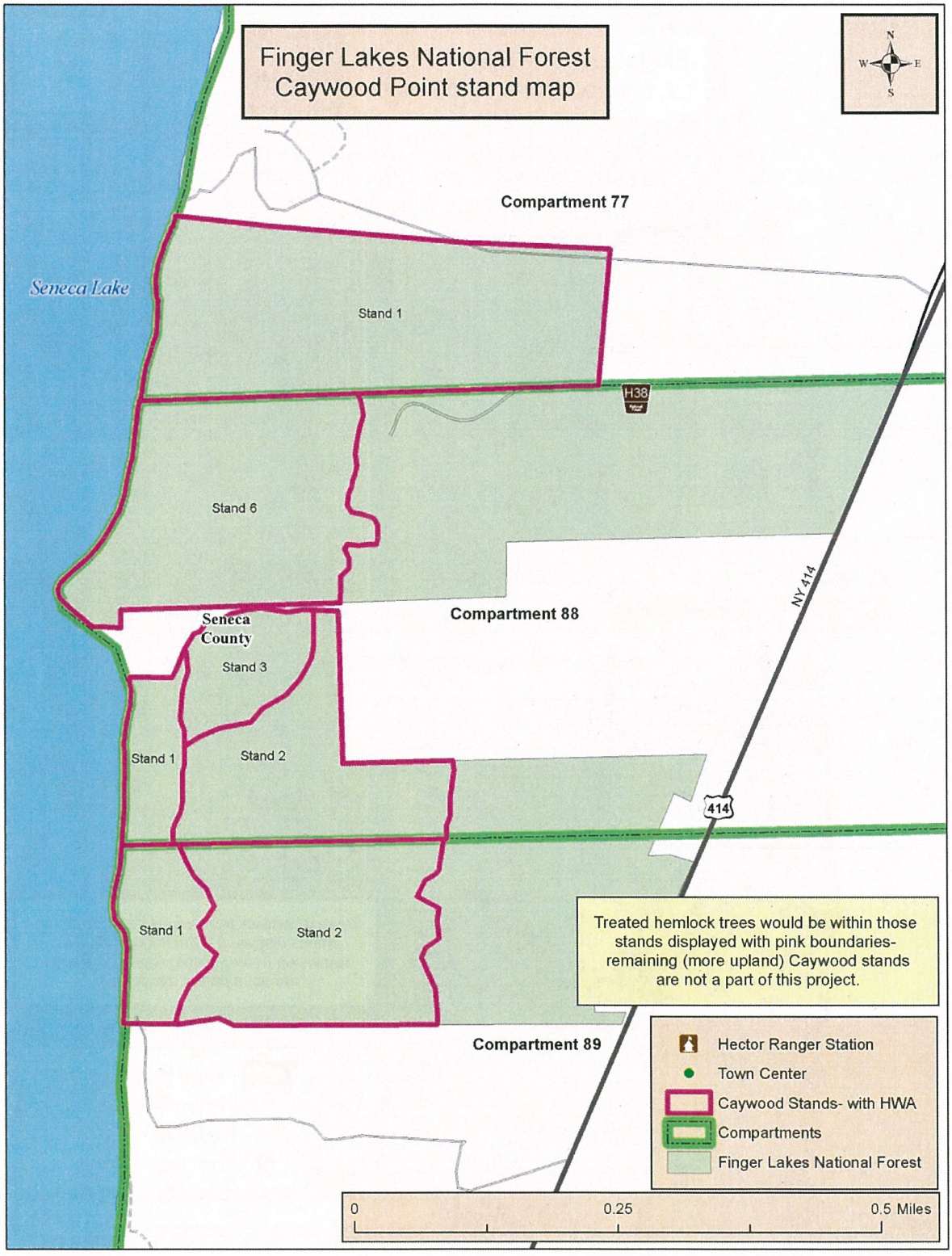
In regards to Regional Foresters Sensitive Species (RFSS):
Field implementers to become familiar with how to identify these plants, carry a map of their known locations, and avoid contact with them. If this happens, no effects would be expected to any of these RFSS.

In regards to American Indian Cultural Sites, Historic Properties or Areas or Archeological Sites:
If during the course of implementation any inadvertent discoveries be made then the Forest Acheologist will be notified and a cultural assessment will be conducted. No removal of any discovered artifacts will be allowed to be altered are removed before this assessment is conducted.

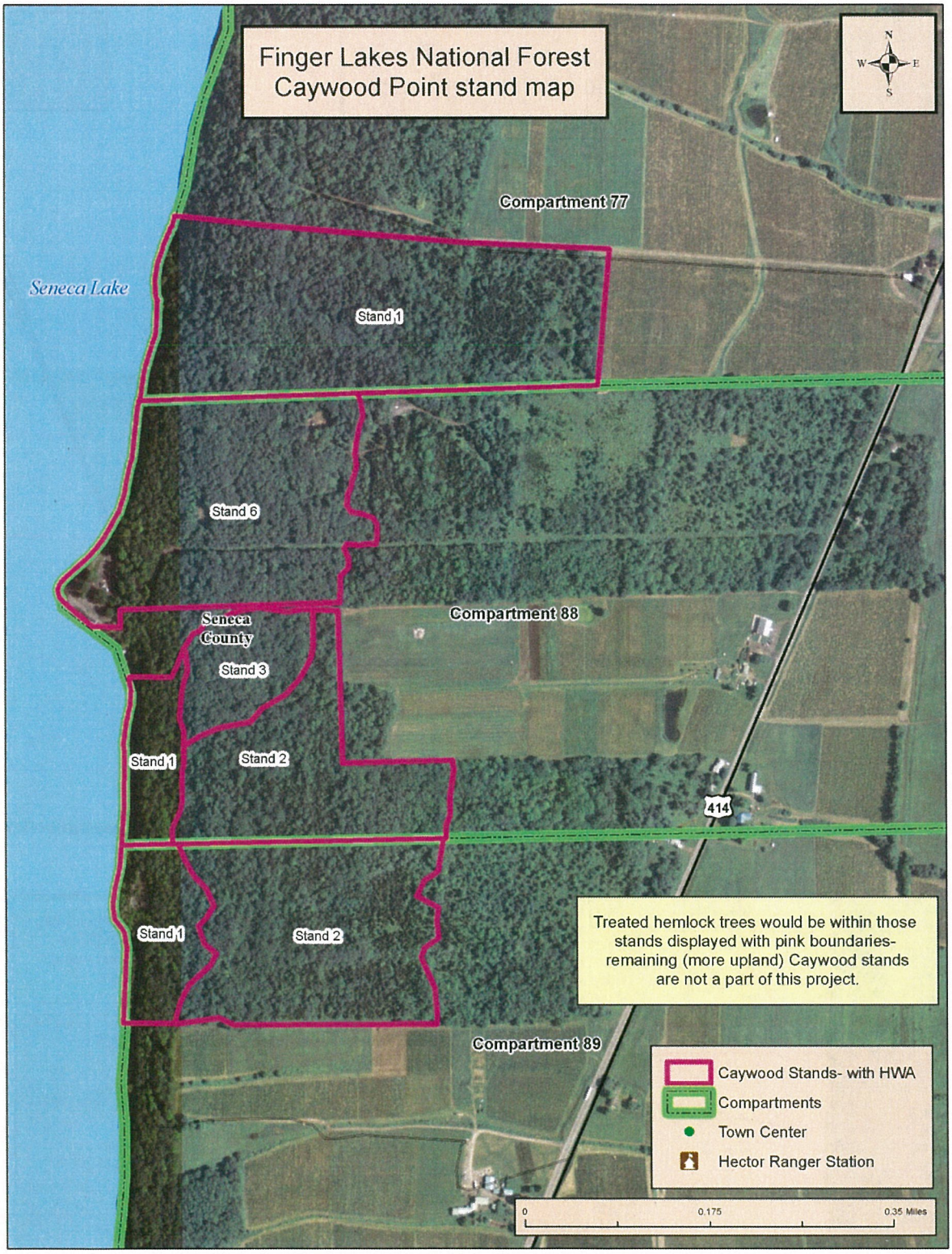
Caywood Point Hemlock Woolly Adelgid Suppression and Prevention Project
Decision Memo
APPENDIX B – Maps



APPENDIX B continued. – Maps



APPENDIX B continued. – Maps



Caywood Point Hemlock Woolly Adelgid Suppression and Prevention Project
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Appendix C

SUMMARY OF SCOPING LETTER COMMENTS

Project Caywood Point Hemlock Woolly Adelgid Suppression and Prevention Project
Proposed Action Legal Notice Date November 29, 2012
End of Comment Period December 31, 2012

Comments were received from:

Response Number	Date Comment Received	Name	Abbreviated as:
1	12/10/2012	Shirley Rice	Rice
Benign or supportive*	12/20/2012	Seneca Nation/ Andrew Myers	Seneca Nation
See below+	1/02/2013	Schuyler County Environmental Management Council/ Kate Bartholomew	SCEMC
Benign or supportive	12/4/2012	John and Sue Gregoire	Gregoires
Benign or supportive	11/29/2012	Gary Raffel	Raffel

***Comments were either supportive or benign in nature and did not need to be addressed.**
+Comment received after the comment period ended- however still addressed concerns by a phone call and response document. All comment documents and responses reside in the project record.

The comments received are herein identified as either being a "Substantive Comment" or not. To meet the definition of being a "Substantive Comment", the comment must meet the following two criteria: 1) the comment must be within the scope of the proposed action, specific to the proposed action, and have a direct relationship to the proposed action; and 2) the comment must include supporting reasons for the Responsible Official to consider.

Caywood Point Hemlock Woolly Adelgid Suppression and Prevention Project
Summary of Scoping Letter Comments with responses

Comment Submitted By:	Comment Number	Comment	Meets Criteria #1	Meets Criteria #2	Substantive Comment? (Yes/No)	Responsible Official's Consideration of Substantive Comment
Rice	1	"The article states that imidacloprid is of low toxicity to mammals, but nowhere does it say anything about toxicity to birds, fish, amphibians, or other insects that are important food sources for birds and mammals, which will eventually accumulate through the animals up and down the food chain to larger mammals and raptors. With bird numbers declining, along with amphibians, I think it is necessary to consider the long term side effects of any poisons released into the biosphere."	Yes	Yes	Yes	The application of stated chemicals will be applied using the NY standards of application and the application guide for both Coretect ™ and Safari ™. Chemical drift and other offsite movement of chemicals will be limited by this application process. The treatment is limited to ~300 trees dispersed over the project area. Stated chemicals will have minimal environmental drift. The project file presents specialist review by ecologist, wildlife biologist, forest health protection staff, a botanist and a Cornell forest entomologist professor- with effects of proposed chemicals to be of no effect to RFSS or TES plant/animals with given mitigation stipulations (see Appendix A). Chemical soil treatment would have some localized impacts on terrestrial invertebrates near the treated trees. Imidacloprid is highly toxic to terrestrial invertebrates that directly contact it, but exhibited low toxicity to other beneficial invertebrates such as ants and spiders (SERA 2005; Kunkel, Held and Potter 1999). Chemical treatments would result in some localized mortality of terrestrial invertebrates, but recovery from individuals moving in from adjacent untreated areas would be expected as the chemical breaks down. However, the small area of soil treated around 300 trees would harm a relatively small portion of the invertebrate population for a short period of time. Once the insecticide has moved into

						the tree and/or degraded in the soil, invertebrates will eventually reoccupy that soil.
Rice	2	"I also am wondering about the use of the basal bark application, which I suppose to be a spray. The application of dioterfuran to the bark of the trees, and its toxicity to mammals, birds, fish, and amphibians, is pointedly omitted. If it kills other insects (bees for instance), birds, fish, squirrels, skunks, or other small mammals that eat poisoned insects, or poisoned buds or seeds, or if the animals come in contact with the dioterfuran (sic) in any way, it shouldn't be used. Some hemlocks might suffer, but it would be better than poisoning any animals."	Yes	Yes	Yes	The application of said chemicals will be applied to the bases of trees and in the soil at the tree bases. Any contact by animals would be brief, slight and by chance. Application will NOT be foliar. There is little to no toxicity (in that way it will be applied) to animals other than those who feed directly on the treated hemlock trees themselves. It is true that bees can be affected by proposed chemicals, but since application will be in forested setting (not in a laboratory or cropland) and with fine scale isolated application, and since hemlock trees do not provide suitable forage it was determined these insecticides pose little risk to bees (SERA 2005; SERA 2009; EA and DN Suppression of Hemlock Woolly Adelgid Infestations, Daniel Boone N.F. 2011). Although dinotefuran is potentially highly toxic to bees, the proposed uses of this compound are not associated with areas high in pollinating insects (EPA 2004).
Rice	3	"And, because imidacloprid is used in crops convinces me more than ever to avoid eating anything that isn't grown organically. If meat animal are absorbing imidacloprid either through their skin or in their food, and the people who eat animals are also eating imidacloprid in their vegetables,	No	No	No	The application of said chemicals will be applied to the bases of trees and in the soil at the tree bases. Any contact by animals would be brief, slight and by chance. Application will NOT be foliar. There is little to no toxicity (in that way it will be applied) to animals other than those who feed directly on the treated hemlock trees themselves. The proposed chemicals as applied are expected to be bound in the trees themselves and the area around the trees

		bread, milk, or fruit, or any food, or water, it might not be immediately, noticeable toxic, but it can lead to all sorts of diseases that we haven't yet found the connections to."				themselves. Little movement is expected offsite due to the nature of the chemical properties and the way they will be applied.
Rice	4	"The short-term gains without considering the long-term consequences is typically human and short-term profit driven. Before the taxpayers pay for these application of pesticides, we need to know the whole life and half-life of these products and where they can eventully turn up and cause damage."	Yes	Yes	No	Field studies show that imidacloprid can persist in soil, with a half-life ranging from 27 to 229 days (Miles Inc. 1993). Since Imidacloprid insecticide could degrade (worst case) to 30% of initial potency within two years in soil, it could accumulate, in the small, widely spaced treatment areas, although uptake by vegetation would reduce this effect. Even with the potential of imidacloprid to persist in soil, the high photo-degradation tendency and high water solubility indicate there is low potential for bioaccumulation in the environment (Fossen 2006). In addition, studies have shown that imidacloprid had relatively little impact on most groups of beneficial invertebrates (Kunkel, Held and Potter 1999). Dinotefuran has an aerobic soil metabolism half-life (mean) of 81.5 days (138.4 days 90th percentile) and an aqueous photolysis half-life of 1.8days (EPA 2004). Although Dinotefuran is bound less tightly by organic matter than imidacloprid, any residues leaching from bark with subsequent rainfall would be expected to bind to soil organic matter or be degraded by light on the soil surface. (EPA 2004, SERA 2009, Cowles and Lagalante 2009)
Rice	5	"For instance, does imidcloprid or dioterfuran morph into another toxin when it degrades?"	Yes	No	No	"Dinotefuran is rapidly absorbed and rapidly excreted in mammals and will not accumulate in mammals with long-term exposure. The mammalian metabolism of dinotefuran is

						complex, but there is no information indicating that the metabolites of dinotefuran are more toxic than dinotefuran itself" (SERA 2009). Imidcloprid has been extensively studied and there are no indications that the metabolized products are more toxic then imidicloprid itself (SERA 2005).
Rice	6	"How far can these poisons travel and how long can they kill?"	Yes	No	No	The proposed chemicals as applied are expected to be bound in the trees themselves and the area around the trees themselves. Little movement is expected offsite due to the nature of the chemical properties and the way they will be applied.
Rice	7	"What are they made from?"	Yes	No	No	Imidicloprid molecular formula: $C_9H_{10}ClN_5O_2$ (SERA 2005) and has several common names. Dinotefuran molecular formula: $C_7H_{14}N_4O_3$ (SERA 2009). Common name: (RS)-1-methyl-2-nitro-3-(tetrahydro-3-furylmethyl)guanidine
Rice	8	"I think more research needs to be done and another article should be published that states all of the harm that will be caused by the use of these chemicals in a straightforward manner so that intelligent decisions can be made."	Yes	Yes	No	Both Imidicloprid and dinotefuran have had Human Health and Ecological Risk Assessment (SERA 2005 and 2009 respectively). These assessments cover the range of case studies on the individual chemicals and their effect on human health and ecological risk. Current research on the subject can be found within the project record. These chemicals are approved for use by NY state when applied in a manner as described by the product label.

Response to comments (below) document sent to Schuyler County Environmental Management Council/ Kate Bartholomew. Response comments are by Mike Bohne (Forest Health Group Leader, State and Private Forestry Forest Health Protection).

"The Council worries, however, that the second phase of chemical control- the application of dinotefuran- might inflict far greater damage to the already established biological control than anticipated."

Unfortunately, hemlock mortality is expected at Caywood Point regardless of the presence of *Laricobius nigrinus*, unless chemical treatment is applied. Dinotefuran was recommended on the heavily infested, large diameter hemlocks at Caywood Point because it is believed that these trees will die before the slower acting Imidacloprid treatments take effect on the HWA population. Dinotefuran and Imidicloprid will be applied in one phase, with both chemicals having at least some impact on the established *L. nigrinus*. However, after the effects of initial insecticide treatment, HWA development will be suppressed to the point that poisoned HWA will likely be too small to be a significant food source for developing predators. The potential non-target impacts of chemical treatments in the natural environment are unclear but would undoubtedly impact other organisms consuming treated hemlock tissue. Therefore it was recommended to withhold treatment from smaller, more vigorous hemlocks (under 11 inches DBH) that can sustain HWA infestation longer than larger and older trees. This will provide a pesticide-free adelgid resource for developing *L. nigrinus* populations. The Caywood Point site will serve as a field demonstration site which will provide valuable data on the field application of both insecticides and predator beetles for the control of hemlock woolly adelgid while maintaining the aesthetics and preserve the gene pool of hemlocks at the site. Post treatment survey data will be shared with the Forest Health Protection community and will add to research on HWA treatments.

Have other insecticides been considered?

All insecticides registered for use against the hemlock woolly adelgid by the New York State Department of Environmental Conservation were considered before making a recommendation for treatment at Caywood Point. The other insecticides considered required foliar spray applications and an annual treatment schedule. Foliar applications of insecticides are very difficult in a forest setting and have a high risk of drift. Imidacloprid and Dinotefuran are the best options for the long term management of an outbreak in a forested environment. Both of these chemicals will be applied systemically which will minimize environmental drift.

Adding a second or third biological control to the system, or would that are too slow to address the current infestation crisis?

Other potential predator beetles and pathogens are constantly being evaluated for release in the United States. Building a suite of natural predators and pathogens is a lengthy undertaking and it still uncertain whether biological control will be effective at reducing the impact of HWA and preserve hemlock health and vigor. Currently, the University of Vermont is investigating potential HWA pathogens but the organisms are not yet available for practical application. Two additional predator beetles are also being developed for biological control of HWA.

Scymnus camptodromus has recently been released from quarantine and has been released in the field in the Mid-Atlantic States. *S. camptodromus* has a high likelihood of establishing in the U.S. as a major natural enemy of HWA. As a summer predator it will complement the winter *Laricobius* predator species currently being released.

The release of the Japanese predator beetle *Laricobius osakensis* occurred in Virginia and West Virginia in 2012. *L. osakensis* is a unique predator that feeds voraciously on HWA. *L. osakensis* and *S. camptodromus* are relatively new and are not yet approved for release in New York State.
Dr. Mark Whitmore is establishing a field insectary in New York to raise current and future HWA predators for release in the region.

Finally, some members of the Council have studied the HWA and know it reproduces via parthenogenesis; therefore the genetic diversity within the population at any one site is incredibly limited. Is there any research out or control methods in the offing that would take advantage of this genetic quirk to inoculate hemlocks with resistant DNA, for instance?

There are a number of ongoing projects investigating potential hemlock resistance to HWA, but unfortunately resistant genes have not been identified and there is no known method to inject mature hemlock trees with resistant DNA. Work is currently being conducted to identify possible resistant hemlocks in heavily infested areas. The hope is to propagate resistant eastern hemlock to restore hemlock in areas already devastated by HWA (http://nrs.fs.fed.us/disturbance/invasive_species/hwa/control_management/resistant_hemlocks/).
Researchers have crossed eastern hemlock with western and Asian species hoping to develop resistant hybrid landscape alternatives for the native hemlocks (http://nrs.fs.fed.us/disturbance/invasive_species/hwa/control_management/resistant_hemlocks/).
Finally, there is an ongoing effort to collect and store hemlock seed to preserve the genome for future restoration (http://www.camcore.org/projects/#Hemlock). Hemlock cone collection occurred on the Finger Lakes National Forest in 2009 and future cone collections are planned.

Caywood Point Hemlock Woolly Adelgid Suppression and Prevention Project Decision Memo
APPENDIX D- Monitoring Plan

As described in the proposed action, monitoring (research) and education is a component of the project itself. As it stands there is current monitoring ongoing at Caywood Point looking at hemlock health and vigor as well as looking at the released bio-control. This project will become part of that on-going monitoring (research) that will provide insight to HWA and the use of pesticides/ bio-controls on HWA. The monitoring plan will include looking at measures that indicate meeting our objectives as laid out in this document. These measures will include; mortality of hemlocks, abundance of HWA, number of bio-controls, canopy cover and more. By gathering these measures we will be able to assess whether the use of the chemicals has had the intent described, i.e saving current hemlocks and reducing HWA populations at Caywood Point.

Caywood Point Hemlock Woolly Adelgid Suppression and Prevention Project Decision Memo
APPENDIX E- Literature Cited

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